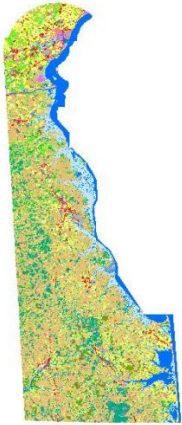


DELAWARE - 2008 FOREST HEALTH HIGHLIGHTS



The Resource

Delaware's forests presently cover approximately 370,000 acres, roughly one third of the land area in the State. Delaware has experienced a rapid conversion of forests and agricultural lands to residential and other urban uses since the 1980s.

Weather Conditions

Delaware experienced summer drought for the third consecutive year in 2008. After a wet spring, very little rain fell from June to September. Drought stress predisposed trees to insect and disease issues, such as borers and Hypoxylon canker, that would not often be seen in healthy trees.

Forest Pest Issues

gypsy moth larva



Gypsy Moth - Surveys in the fall of 2006 found higher egg mass counts than in previous years. In 2007, an aerial survey of the entire State found 287 acres of gypsy moth

defoliation in Sussex County. In June 2008, 791 acres of defoliation were mapped, again in the same tract of land in southern Sussex County. Sweetgum was the preferred host. The landowner has chosen not to spray unless damage increases in coming years or if more valuable species are defoliated.



Southern Pine Beetle (SPB) - An aerial survey of the entire southern portion of the State in June 2008 revealed no significant SPB hot spots. Delaware again participated in

the Southwide Southern Pine Beetle Pheromone Study. Beetle counts from four pheromone-baited Lindgren funnel traps indicate the population is at a low or declining level.

Emerald Ash Borer (EAB) - Ash represents only about 1% of Delaware's rural forests but is a significant component of the urban forest in some areas. Delaware Forest Service staff have assisted with eradication efforts in neighboring Prince



George's County, Maryland. An EAB response plan has been jointly developed by DFS, APHIS, and the Plant Industries Section to guide response efforts if this pest is

found in Delaware in the near future. Additionally, DFS and Plant Industries jointly initiated a Statewide survey in 2008 using baited purple panel traps. Forty traps were hung at 20 locations from May through October. EAB has not been detected in Delaware.

Sirex woodwasp (*Sirex noctilio*) - This wasp presents a threat to loblolly pine, the mainstay of the forest products industry in southern Delaware. A trap tree program was implemented in 2007 to survey for this pest using unbaited Lindgren traps. In 2008, 10 traps were used at five sites; traps were



baited with a *Sirex noctilio* blend. *Sirex* has yet to be detected in Delaware, although some native Siricids were collected.

Other Insects - In 2008, service foresters reported light to moderate damage from sawflies, bagworm moth, and various scale insects.

Disease Concerns

Bacterial Leaf Scorch (BLS) - After extensive Statewide surveys in 2006 and 2007, this disease is known to be common throughout Delaware in both urban and traditional forest settings. In urban areas,



pin and northern red oaks are primarily affected. In rural woodlots, the disease has been confirmed in scarlet, black, northern red, and southern red oaks. In 2008, permanent plots were established in a forested setting where BLS

has been confirmed to quantify the cost and progression of this disease through time.

Hypoxylon Canker (*Hypoxylon atropunctatum*) -

Widespread mortality due to Hypoxylon canker was seen throughout the State. This pathogen causes disease only in stressed trees. Three years of drought have predisposed trees to infection. While many species were affected, oaks, especially southern red, white, and black, were most damaged. Service foresters reported that this was the single most common damaging agent in red oaks inspected during calendar year 2008.



Sudden Oak Death - For the second year in a row, Delaware Forest Service personnel deployed rhododendron leaves in flowing water at three sites. Leaves act as bait for any *Phytophthora* spores that may be present in the stream water. After soaking for two to three weeks, leaves were retrieved and sent to labs for analysis and culturing. This process was repeated six times between May and November. To date, this pathogen has not been detected in Delaware.



Forest Health Monitoring

Deer Exclosures - Delaware's whitetailed deer herds benefit from near-ideal habitat and mild winters. As a result, deer populations have reached very high densities. Deer browsing has been documented as a factor affecting understory composition and ingrowth in hardwood forests. A study was initiated in 2005 to quantify the browse effect. Seventeen 10 by 10 meter fenced exclosures have been installed in oak forests throughout Delaware. Measurements were taken at each exclosure and its accompanying control plot. In 2009, some exclosures will be re-inventoried to quantify any differences.



Forest Fragmentation

A 2006 study by the Delaware Forest Service using Geographic Information System (GIS) technology estimated the rate of forest loss for development at about 3,000 acres per year. A follow-up study in 2008, using 2007 aerial photography, determined that only about one-third of the 3,000 acres in proposed areas had actually been cleared during the five-year period.

Delaware Forest Service
2320 South DuPont Hwy.
Dover, DE 19901-5515
Phone: (302) 698-4500

Visit our Forest Health Page at:
dda.delaware.gov/forestry

